Desert Skies

Tucson Amateur Astronomy Association

Volume XLVI, Number 7 July, 2000

Iridium Flare Over the Grand Canyon

Calendar of Events

BEGINNERS LECTURE: July 7, 6:30 pm at the Steward Observatory Auditorium - Room N210. This month's topic is "Beginning Astronomical Photography" by Dean Ketelsen.

GENERAL MEETING: July 7, 7:30 pm at the Steward Observatory Auditorium - Room N210. Topic is "Collisions of Comets and Planets" by Dr. Gary Peterson.

BOARD OF DIRECTORS MEETING: Thursday, July 13, 7:00 pm at Steward Observatory Conference room N305.

STAR PARTIES AND EVENTS:

- **July 29 - TAAA Empire Ranch Star Party**

Newsletter Schedule: Deadline for articles: Monday, **July 17**. Printing: Tuesday, **July 25**. Folding Party: Wednesday, **July 26**. Mailing: Thursday, **July 27**. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

Cover: During the Grand Canyon Star Party, Dean Ketelsen went up to the rim to catch a -3 magnitude Iridium flare below Cygnus. Dean will give some advice and rules of thumb for taking astrophotos like these and other more advanced topics at the July beginner's lecture. This exposure was a 2 minute exposure with a 35mm lens on slide film. The first quarter moon illuminated the Canyon. Scanned by Lee Dettman.

TAAA Web Page: http://www.tucsonastronomy.org **TAAA Phone Number: (520) 882-1950**

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Newsletter Editor	George Barber	822-2392	barbergj@flash.net
Star Party Coordinators	Maggie & Jeff Buzek	760-4578	jeffbuzek@aol.com

TAAA Mission Statement:

We are a resource for anyone interested in astronomy. It is our mission to nurture a person's natural curiosity about the night sky. By giving people a knowledge and understanding of astronomy, we enhance their enjoyment of the solar system and beyond. Through our public activities and school evening observing sessions, we bring astronomy to persons of all ages. Our regular meetings and observing sessions offer members a forum to meet others with similar interests and experiences and to learn from one another.

Annual Membership in the TAAA:

Regular membership	$ 23
Senior membership (over 60)	$ 21
Student membership	$ 15
Add for Family membership	$ 5
Add for Astronomical League (optional)	$ 3
Add for contribution to Southern Arizona Section of I.D.A. (optional)	$ 3 (recommended minimum)
Add for Sky & Telescope Magazine Subscription	$ 29.95
Add for Astronomy Magazine Subscription	$ 29

Rates for membership are given above. Family Membership includes two adults plus minor children. Members may subscribe to **Sky & Telescope** or **Astronomy** magazine (or both) at the time of membership renewal, saving substantially over the regular subscription rates. To assure we understand what you are paying for, please identify which class of membership and what options you want. Send one check made payable to *TAAA* to cover membership dues, magazine subscription(s) and any contributions to:

Tucson Amateur Astronomy Association
P.O. BOX 41254
Tucson, AZ 85717

Four Easy Steps to Membership Renewal:

1. Pay your dues 2-3 months early. Your month of membership expiration is listed on your newsletter mailing label.
2. Find your membership class and its rate. Add the Family Membership rate to this, if applicable.
3. If you desire membership in the Astronomical League or magazine subscription (s) or wish to make a donation, add the appropriate amounts to your membership rate. If a magazine subscription renewal is desired, include the magazine renewal notice, if possible. Be sure to identify which options you are paying for.
4. Write one check, payable to *TAAA*, and send it to the address given above.

- Call the Treasurer if you have any problems
- Send address changes to the above address.

Desert Skies Publishing Guidelines:
All articles, announcements, news, etc. must be submitted by the newsletter deadline noted above. Materials received after that date will appear in the next issue. All submissions are retained by the editor unless prior arrangements are made. Partial page article submissions should be submitted in Word compatible files via e-mail or on a floppy disk. Full page articles, artwork, and photos should be camera ready. We will not publish slanderous or libelous material! Send articles, announcements, etc. to:

TAAA - Desert Skies
c/o John Kalas
3470 W. Red Bird Court
Tucson, AZ 85745

or e-mail: jckalas@aol.com

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President's Message

The Beginners Star Party at TIMPA on June 3rd was very well attended even though there were two competing events that night; the Whipple Observatory MMT Rededication and the start of the Grand Canyon Star Party. The evening was cool, clear, and amazingly mosquito free.

With the closing of most Tucson-area schools, our school star party activities have disappeared. This is somewhat of a welcome relief from the hectic schedules that the club supported from February through May. An early start to the "monsoon" season may play havoc with the club's member star parties for the next several months. We'll just have to wait and see.

Last month, I announced that Dean Ketelsen had volunteered to coordinate the Astrophotography Special Interest Group. Jumping in with both feet, Dean is presenting the Beginners Lecture this month. If you are interested in learning about this favorite amateur astronomy activity, don't miss Dean's talk. He is starting out with the basics and will be developing his future presentations to guide us through all aspects of astrophotography. This should be the start of a great series of talks.

March, April, and May were rather quiet regarding TIMPA Site activities. That all changed in June. In the ***TIMPA Site News*** section of this newsletter see John Polacheck's article updating us on recent events.

Congratulations to Dr. Ed Vega for being awarded the prestigious TAAA Bok Award at the June meeting in recognition of his many outstanding achievements in amateur astronomy. Dr. Vega graciously accepted the award and acknowledged the support and achievements of his wife, Pat. The TAAA appreciates such good friends as the Vegas and wishes them continued success.

John Kalas

Meeting Information

Beginner's Lecture

"Beginning Astronomical Photography"
By Dean Ketelsen

The July Beginner's Lecture will cover some of the beginning aspects of night time sky photography. These days between CCDs and some of the high tech astrophotographic systems available, beginners are oftentimes intimidated and turned away by the large investments needed. Dean will emphasize starting out slowly and using equipment that you may already have to take astronomy photos to be proud of without breaking the bank

Main Meeting

"Collisions of Comets and Planets"
By Dr. Gary Peterson

In the early formative period of the Solar System, the Sun went through a high-energy phase and expelled the lighter elements (mostly gasses) into the far outer reaches (beyond Pluto) where they condensed as "large hailstones" to form the Kuiper Belt and Oort Cloud of comets. All comets orbit the Sun and some have highly elliptical orbits which carry them through the inner Solar System. Hale-Bopp is a great recent example. These comets have the potential to collide with any of the planets (Shoemaker-Levy 9 collision with Jupiter, for example). When they collide, their light-element content is transferred to the planets and these collision events provide planets with the ingredients of oceans, atmospheres and/or polar ice caps. Most comet-planet collisions occurred early in Solar System history and collisions at the present time are rare events.

This lecture will be presented by Gary Peterson, PhD, of the San Diego State University Department of Geology, who has kindly agreed to come talk to us free of charge because he really enjoys giving lectures. This promises to be a great evening.

Club News

Member News

We welcome the most recent members who have joined the TAAA: Bill Gillespie, William A Miller, Melvin and Janette Simister, and William Veith, David Watson and his family (father Richard and sister Heather). Although both David and Heather Watson are in high school, they are attending James McGaha's Pima College astronomy class and doing very well. Glad to have all of you join the TAAA! If you haven't already, be sure to pick up a new members pack at a meeting. Hope you'll make it to our star parties or meetings so we can all get to know you.

Some news about the authors among us. Ed Vega recently had a book published titled "Comet Dis' Aster". This is a realistic story about a comet impacting the earth. (I'm just getting into the story...the comet hasn't hit yet). Former TAAA member Ed Blair just had his first novel accepted for publication. It's titled "Journey into the Interior" and is about a fur trapping expedition in the late 19th century (if I remember it correctly). It will be released soon. And, of course David Levy's articles can be found in the Sunday Parade. Any other authors out there doing something new?

Club News (cont.)

Calendars for 2001

We have received calendars for the year 2001, but something about selling them in July doesn't seem right. So beginning with the August meeting until we run out, the new Astronomy 2001 calendar will be available for purchase. These calendars are published by Kalmbach Publishing (the publisher of Astronomy magazine) and each month features a beautiful astronomical photograph. Information of astronomical interest is listed for most dates, plus there's space to add your own appointments and family events. The regular price is $12.95, so at $10 each ($9 each if you get more than one) this is a bargain.

Proceeds from the sale of these calendars will be used appropriately as decided by the board. Proceeds from the last two years of calendar sales were recently used to purchase a tripod for the Meade ETX telescope, which was given to the TAAA by David and Wendee Levy for all of our efforts in the Telescopes for Telethon star party we held last year. Thank you to all who have helped support the TAAA through the purchase of the yearly calendars.

Club Purchases Tripod for Donated Telescope
by John Kalas

At the June Board of Directors meeting, the board authorized the purchase of a JMI Tripod for the Meade ETC-90EC Telescope that was donated to the club by the Telescope for Telethon Committee. Laurel Dunlap actually purchased the tripod and used the telescope and tripod at the MDA Children's Camp on 6/14. She reported that the combination worked very well and the kids at the camp really enjoyed the views. The tripod has built-in red LED indicator lights in each leg. With the addition of the tripod, this telescope is now ready to be prepared for loaning out to TAAA Members. Watch future newsletters for the announcement.

La Paloma Star Party May 16th
by Sam Turner

TAAA Members View the Big Dipper!
What does one do when the telescope set-up is on the balcony of a hotel with a roof overhang facing north during an almost full moon with hotel lights on? Members of TAAA were able to "make do" and entertain 350 guests from the Western Association of College and University Business Officers. Nick Applegate, Kevin Bays, Robert Wilson, Mike Turner, and Sam and Phyllis Turner angled their scopes for views of the Moon and Mizar and Alchor. With the lights, M-13 was a dim smudge in our scopes. Robert's Dobsonian had its own built-in "well-tunnel" which helped in gathering light for this challenging evening. The guests were thrilled even with such a restricted variety of viewing objects. Many stayed until 10:30 asking questions and commenting on the brilliance of the sky. Well, naturally they would; most were from Los Angeles or Seattle, areas where people don't even know stars exist!

Smithsonian Study Group Thrills at Omega Centauri
by Sam and Phyllis Turner
Rosemary and Ken Reiser (of Benson) joined members of the TAAA to entertain a Smithsonian Study Group at Vega Bray Observatory in Benson on 5/27. While George and Cindy Cormier and Mike Turner held forth in "The Garage" demonstrating three or four giant scopes, Terri Lappin, Kevin Bays and several other members had their scopes on the platform deck and answered questions for about fifty visitors. Terri manned the 14.5" f/5.6 giant "cannon" Newtonian which Gary designed and built (Terri helped). The "Elysium Mount" is Gary's design. Dr. Vega now owns the scope and mount. The scope gave a spectacular view of M-13.

Members were careful to explain what a treat it was to be able to see Omega Centauri, about 25 degrees above the southern horizon. We were gratified when comments like "Wow" and "Oh my" were heard. Ed Vega was on hand to talk with the guests and visit with members. The night was excellent for viewing. By the time Cygnus and the beginnings of Sagittarius were up, most of us had packed for home. One of the gratifications of volunteering for events like this is the "thank you" comments from the visitors. Many of the folks live in areas with such light pollution that they have almost forgotten what a clear, dark sky looks like. If you haven't participated in a volunteer star party viewing, try it.

Star Parties & Events

TAAA Empire Ranch Star Party
July 29 (Saturday)

The Empire Ranch has been our normal dark-sky observing site for quite a number of years. Empire Ranch is about 4000 feet in elevation, so be prepared for cool temperatures and try to arrive before sunset. Stay as long as you like, but let everyone know when you are ready to leave; someone may be taking astrophotos. Bring a telescope if you have one, but you don't need one to attend. Any member would be glad to let you look through their telescope. There are no restroom facilities at the site, so be prepared. Bring insect repellant, just in case. Attendees should park their vehicles either perpendicular to the airstrip facing toward the center of the strip or parallel to the airstrip along either side facing west. That way, when you are ready to leave, you will not have to backup and turn on your bright white backup lights. One nice advantage of belonging to the TAAA is the opportunity to observe among friends. Help in finding an object or the sharing of equipment always goes on at our star parties. If you haven't attended a star party yet, you're missing the best part of belonging to the TAAA. See the directions to Empire Ranch on the outside flap of this newsletter.

Items of Interest

Websites: Trips on the Internet Super-Skyway by Rik Hill

Back in March I talked about looking down at our Earthly abode from satellites in orbit. But have you ever tried to not only just eyeball a satellite or two, but actually use your telescope to find a specific one or identify one you just saw pass over? If you have ever been even slightly interested in that there's a website that is bound to fascinate you. It's a very interactive site called Heavens Above at:

http://www.heavens-above.com/

You start here by going to the link "Entering your coordinates manually". Here you enter your Latitude and Longitude and name for your observing site then touch "submit". This will take you to the "Main Page". For starters you should get the ephemeris for Mir, the International Space Station (ISS), or the Hubble Space Telescope (HST). These are good, bright and easy to find. Click on one of these and you will get a 10-day listing of their visibility from your site. Notice that the dates on these listings are further links (as are several other items). By clicking on or touching these dates you will be shown a chart of the satellite/spacecraft track across the sky. This will not only help you identify the object, but you can use it to set your telescope on a bright star along the track so you can get a brief view of the object as it whizzes by. By putting your cursor in the sky chart on any given point and clicking again, you will get a magnified view of that region. This will allow you to put a telescope exactly in the path of the object. With a little practice you will probably learn how to follow the object too. With an alt-azimuth mounting this will be a bit easier. You should be able to see some details with moderate magnifications on these three objects.

This technique can become more important as you delve into this website. There's the "Daily predictions for brighter satellites" link. This will give you the locations for the several dozen satellites etc. that are visible from a given site each day. Much of this is debris like old spent rockets and portions of lower stages. You will rapidly become impressed at the amount of junk that is up there in orbit. You will also become impressed by how much of that is Russian/Soviet! By touching the satellite name you will bring up a page or two of information on that object. By touching the time you will get the finder chart.

From two links on the Main Page you can select a satellite from the huge database that is maintained by Chris Peat who developed and maintains this site. The first thing I searched for was the oldest orbiting thing. I used the box "Enter year of launch" and started with 1958. It returned Vanguard 1, whose rocket and one clamp as still up there. Yep, that old thing is still up there going around every hour and a half. Launched on March 17, 1958 it is the "oldest man-made object in orbit". That was irresistible. It is frequently between 10th and 14th magnitude so it was going to be a challenge. I clicked on the satellite name which took me to its information page. In the upper right of that page were the choices: Home|Passes|Orbit|Help. I went to Passes and got a listing of passes for the next 10 days. I selected one that was well placed in the sky and somewhat bright (11th mag.). Using the chart I set my C5 on a star that the satellite would nearly pass over. Then I waited for the right time. I began watching several minutes early so my eye would learn the stars in the field. Then at the correct moment a faint, ghostly little star came rushing through the field. I followed it for a few fields and then lost it, but I had clearly seen it! Here was a satellite whose launch I clearly remembered and that I observed as a kid. I was hooked on this kind of observing!

On this site you can also look up Iridium Flares for your locality. They not only tell you when but how far and which direction you have to go for the best view. There is also a new section that gives you the same kind of information for a number of Asteroids.

There's a lot of fun observing to be had thank Heavens Above!

Hands-On Science At Whipple Observatory

Saturdays at the FLWO Visitors Center brings hands-on science for young people (and adults) in the morning, and a lecture in the afternoon for those wanting to keep hands clean.

Bring the kids, bring the neighbor kids, bring the grandkids, or just bring yourself.

Children's programs will be conducted in the morning, beginning about 11 a.m. Lectures will be presented in the afternoon, about 1:30 p.m.

Se habla Español en sábado The Visitors Center will have a bilingual staff member on hand on Saturdays. Call 670-5707 for program information.

The next three weeks -- June 17 "Chemistry: Messy Mixtures & Slimy Solutions", Prof. Wayne Adickes, University of Arizona.
June 24, "Good, Ugly, and Other Bugs: Insects and You", Prof. Carl Olsen, University of Arizona
July 1, "Ecology/Biology: Surviving on Desert Food", Felipe Molina, Native Seed/SEARCH

For programs throughout the summer, check http://cfa-www.harvard.edu/flwo/flwolect.html

SummerFest 2000 Simply Southwest

Astronomy in the Southwest: Past, Present and Future Hosted by: Department of Astronomy, 621-2288 Location: Steward Observatory Auditorium, Room N210

Monday, June 19, 8:00 p.m., Ray White (Past)
Thursday, June 22, 8:00 p.m., Chris Impey (Present)

Items of Interest (cont.)

Monday, July 3, 8:00 p.m., Roger Angel (Future)

A series of evening lectures which will acquaint students and the general public with the long history and great potential of astronomical observations in the Sonoran desert. Ray White will begin with a broad perspective on Native American astronomy, outlining the history of astronomical observations and the sophisticated use of calendars. Chris Impey will follow with the present, outlining new perspectives on the universe that are offered by the many observatories in the Southwest. Roger Angel will conclude with a survey of the remarkable capabilities of upcoming generations of telescopes. The lectures provide a mixture of science, technology, and culture with a Southwest flavor presented by speakers who are all accomplished in their field. Ray White is a University Distinguished Professor and Faculty Fellow. Along with his duties as the Deputy Department Head, Chris Impey is a Professor of Astronomy. Roger Angel is a Regents Professor, as well as a Fellow of the Royal Society.

Help Wanted at Kitt Peak

Adam Block, coordinator of the Kitt Peak public evening observing programs, is seeking a qualified person for the following position. Please contact Adam at 318-8728 if you are interested in this opportunity.
The National Optical Astronomy Observatory seeks an Observing Technician/Guide for part-time employment at the Kitt Peak Visitor Center. The primary responsibilities for this position are to conduct evening presentations as part of the Nightly Observing Program and assist with all-night observing sessions as necessary. This position requires a basic knowledge of astronomy and skill in the areas of public speaking and proficiency with computers and amateur telescopes. Candidates must be able to work without close supervision while maintaining the highest level of awareness in terms of both public safety and non-interference with scientific research programs at Kitt Peak. Knowledge in the areas of telescope maintenance/modification, web page design, and CCD imagery are highly desirable. Visit: http://www.noao.edu/outreach/nop and http://www.noao.edu/outreach/aop for more information about these programs. Preference will be given to qualified Native Americans living on or near the Tohono O'odham reservation.

SA-IDA News

by John Polacheck

Attendance has been meager at the recent Southern Arizona Section of the International Dark Sky Association meetings. Why??? Aren't TAAA members concerned about keeping the sky dark in and around Tucson, or even having it darker!!! We believe that most TAAA members have telescopes and most observe from their homes, at least occasionally. More would observe and more would observe more often, if the sky were even darker.

Since TAAA members are not coming to SA-IDA, we decided to bring SA-IDA to the TAAA. First, check your own property and, if there is an outdoor lighting problem, correct it. You certainly do not want a complaint filed against you!!! Next, check out your immediate neighborhood. We are sure that there are lights out there that have been bugging you. You can try asking the property owners to change them or, if they are illegal, you can fill out an official complaint form and mail it in.

WE HAVE ENCLOSED A COPY OF A COMPLAINT FORM IN THIS ISSUE OF THE NEWSLETTER FOR YOUR CONVENIENCE. Mail the completed complaint form to John Gross at 14330 West Brook Place, Tucson, AZ 85736. John will log in the complaint and forward it to the appropriate city or county agency for action.

SA-IDA members will be at the July general meeting of the TAAA to answer questions or you can visit the IDA office at 3225 N. 1st Ave. (just north of Ft. Lowell) for help or you could always attend a SA-IDA meeting in person. The next meeting is scheduled for Wednesday, August 9th, at 5:30 PM at the IDA office. WELCOME.

Astronomer volunteers and teachers needed for Project ASTRO - Year Five!

The NOAO Educational Outreach Office is now accepting applications from TEACHERS and ASTRONOMERS (professional, amateur, and students) who wish to take part in Project ASTRO's fifth year in Tucson. This program forms partnerships between scientists and teachers and provides training, materials, and support for participants. Partnerships will take place next academic year (2000/2001) and the training workshop is scheduled for October 13-14, 2000.

Applications will be accepted through August 30. Consider applying as an astronomer partner (a degree in astronomy is NOT required) and get involved in this worthwhile teacher enhancement program. For more information about Project ASTRO visit this web page: http://www.noao.edu/outreach/astro/ or contact Ginny Beal, gbeal@noao.edu, or 318-8535.

LIGHTING COMPLAINT FORM

SOUTHERN ARIZONA SECTION of the INTERNATIONAL
DARK-SKY ASSOCIATION
3225 N. First Ave., Tucson, Arizona, 85719-2103. ida@darksky.org (http://www.darksky.org)

LIGHT POLLUTION--GLARE--LIGHT TRESPASS

DATE:_____
ADDRESS OF PROBLEM LIGHT:_____

CITY:_____ **COUNTY**_____
OWNER OF PROBLEM LIGHT :_____

STATE PROBLEM (please be specific, including the location the of the bad lights):

YOUR SUGGESTIONS AS TO HOW TO REMEDY THE PROBLEM:

HAVE YOU ALREADY CONTACTED THE OWNER ABOUT THE PROBLEM ? ____NO
____YES: DETAILS:_____

COMPLAINANT'S NAME AND ADDRESS_____

PHONE NUMBER:_____ EMAIL ADDRESS:_____

THANK YOU FOR YOUR INTEREST IN A BETTER COMMUNITY.

PLEASE MAIL THIS FORM TO:
MR. JOHN GROSS
14330 WEST BROOK PLACE
TUCSON, AZ 85736

Grand Canyon Star Party 2000

Grand Canyon Star Party '00
By Dean Ketelsen

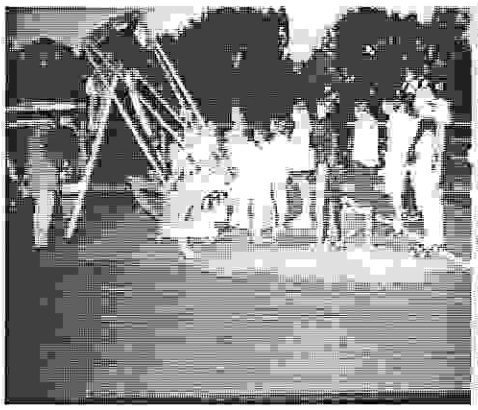
The Star Party was a great time - you should all have been there! All participants had a great time and contrary to some rumors I heard, the 2 forest fires within 80 miles of us had no effect on the viewing. We had 8 clear nights with nary a cloud to hamper observing, though some strong breezes made observing uncomfortable and the viewing shaky midweek. I'm hoping others will write coverage, I only would like to note some web coverage. Star Party Iron-man Bernie Sanden (hiked to river and back in 6 hours, then gave the twilight talk) has listed his pictures on a website at http://www.inficad.com/~bsanden/gcsp00.html. Go see what we were up to all week! Also, SPACE.COM wrote a nice story about us that included some photographs. While checking for this note, it was down, but look for it at

http://www.space.com/scienceastronomy/astronomy/canyon_star_party_000612.html

if it comes back to life again. The only other item of note to mention is the Saguaro Astronomy Club. They wanted to take a little more active role in the star party and hosted the lunch on Sunday the 4th of June. Between SAC and Margie Williams we had a buffet line in the wilderness you would not believe! It was a great cookout and event to socialize with everyone attending. Hope to see you all there next year (looking at 16-23 June, 2001) !

Grand Canyon Star Party
Photos and text By: George Barber

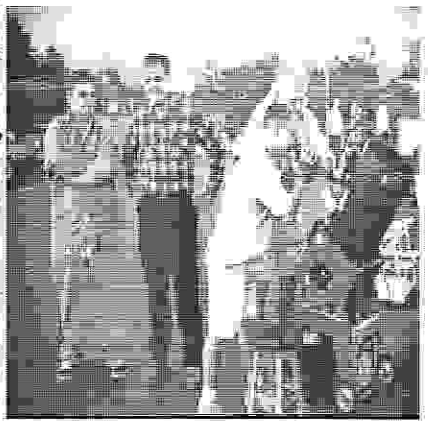
For eight days in early June, I had the opportunity to attend the Grand Canyon Star Party. Hosted by the TAAA, the East Valley Astronomy Club, and the Saguaro Astronomy Club, this event gave us a chance to let the visitors of the Grand Canyon experience the beauty and wonder of the night skies for themselves. From June 3 through June 10, we presented an evening slide show, followed by opportunities to look through various types of telescopes at the Sun, Mercury, stars, nebulae, clusters, and galaxies.



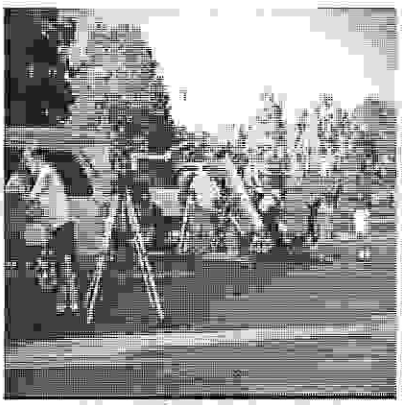
Although the star party has been going on for ten years now, this was my first chance to attend the event. I must say that I had a really great time! The first Saturday night there, the skies were incredible. With no cities nearby, the Milky Way took center stage soon after it rose in the east. I spent a lot of time that night simply awed by the sight, and even though I was tired from my drive and setting up camp, many of us still stayed up past midnight.

The next day was a special treat. The Saguaro Astronomy Club put on an afternoon cookout, which was a real knockout! There was plenty of food for everyone, and the meal was capped off with a special 10th anniversary cake. Believe me, no one went away hungry. I'd like to offer special thanks to Jack, Jennifer, Margret, and Margerie of the SAC. They did a great job with everything.

For a star party with an international flavor under fantastic skies, the GCSP just can't be beat. Every night was clear until Thursday, where we played "now you see it, now you don't" with the fast-moving clouds. About Wednesday, the weather did turn colder and there were times I wished I had a parka! But the air was crisp and invigorating. I'd have to say our best night of seeing was Tuesday, when one of the members split Epsilon Lyra so well (about 600x) that Bob Goff said "you could have driven a truck between them".



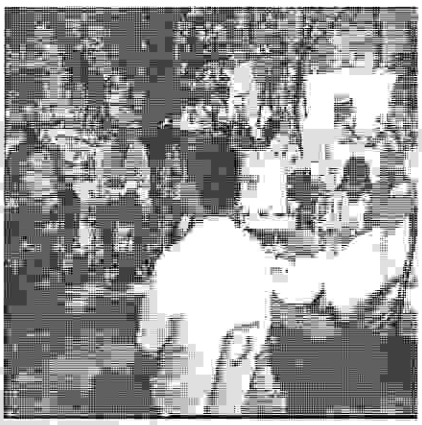
The evening presentations were very popular, as well as the viewing afterwards. Dean Ketelsen gave the presentation both Saturday nights, as well as Wednesday. He covered general Astronomy. Joe Bergman spoke on Sunday on Astronomical Art. Dennis Young covered the Monday and Friday slots by speaking on Astro-scenic Photography. Wednesday, the crowd was treated to a talk on Solar Eclipses by Derald Nye, and Thursday Bernie Sanden took them way out with Deep Sky Observing. Despite the cold weather at times, we still saw crowds until past 10:00 pm. Sometimes, we'd get a surge around 11:00 pm with the Grand Canyon employees. I met people from across the U.S., as well as from Denmark, Germany, Holland, Brazil, England, Canada, Sweden,



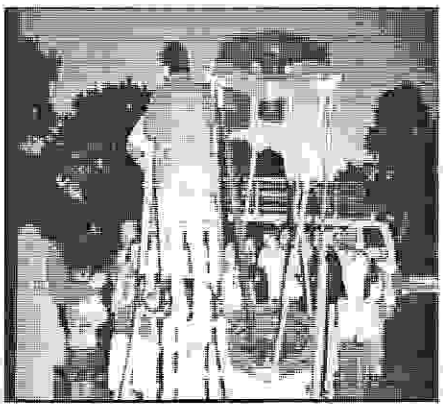
Grand Canyon Star Party 2000 (Cont.)

Japan, India, Taiwan, France, Switzerland, and Morocco. I thought that was very exciting. People were just fascinated with what we were doing, and I answered a lot of questions about astronomy and telescopes.

Despite the excitement of nighttime stargazing, daytime was no sleeper, either. Exploring the canyon was simply awesome, with breathtaking views at all of the stops. I also enjoyed catching the IMAX showing of *Grand Canyon*. This film covered it all - history, people, flying, and white water rafting! I also heard about a different kind of optical experiment taking place during the week. Using carefully aimed laser pointers, communication was established between the South Rim GCSP and it's North Rim counterpart! Perhaps next year, some clever optical or electrical engineers will team up and put together a real-time communication system. Our group also made friends with a biologist who was there to observe the California Condors. Many of our members got the opportunity to see the condors as they rested on a ledge deep within the canyon. On our last Saturday there, Mr. And Mrs. Wahler, our liaison with the Grand Canyon National Park, held a bar-b-que lunch for us at their home.



There is not enough room here to give everyone credit for their part in the GCSP. Obviously, Dean Ketelsen deserves highest regards for all his hard work in coordinating the event. All of the presenters deserve a big thanks, too, along with Mr. and Mrs. Wahler. A sign-in sheet was circulated one evening, and over 50 people are listed on it. Dean and I have reason to believe that there were significantly more telescopes there that week. While the majority of the telescope operators were from Phoenix or Tucson, we also had attendees from Arizona (Corona de Tucson, Maricopa, Sedona, Prescott, Page, Vail, Gilbert, Green Valley, Grand Canyon), Texas (Houston, Alpine), California (San Rafael, Pasadena, Onyx, Palmdale), Kentucky, and Kansas City.



The eight day star party was a great success. It gave us a chance to share the wonders of astronomy with people from around the country and around the world. We enjoyed the pristine skies of the Grand Canyon by night, and one of the world's seven natural wonders by day. We made friends, and enjoyed the camaraderie of exploring our universe and sharing our knowledge of it with each other. For me, the 10th annual Grand Canyon Star Party was truly an awesome event.

TIMPA Site News

This past month nothing appeared to be happening. That is because all of the action was behind the scenes. AND, THERE WAS A CONSIDERABLE AMOUNT OF ACTION THIS PAST MONTH !!!First, the bathroom project. The TIMPA organization has an architect drawing up plans as we speak. Soon we will be beating the bushes for building supply donations. It ought not to be too long before we are arranging for construction crews. First "flush" is in sight.

Next, the telescope committee met, examined the club's 16 inch telescope (stored in the TIMPA barn), and set priorities for modifications to make it more user-friendly. Drawings are currently being made for a mechanism to permit rotation of the upper end of the telescope for ease of viewing through the eyepiece. Cost estimates will soon follow and then the actual machine work will be pursued. It is planned to have the telescope modifications completed so it can be installed when the dome is ready!

Finally, the dome. A small "scouting party" went to Kitt Peak on June 11th to determine exactly what needs to be done before moving the dome and support structure to the TIMPA site. The goal of the trip was to determine if the two structures could be disassembled to reduce the cost of transporting them. The general consensus was that the dome could be completely disassembled so that it could be moved with a large pickup truck. The welded steel support structure could be cut in half and transported in two pieces on a large flatbed trailer. The next major project, scheduled for July, is to remove the aluminum siding and some old panels of asbestos from the

TIMPA Site News (Cont.)

support structure.

A work party has been tentatively scheduled for the morning of Sunday, July 16th. A few hard working volunteers are need. If you are interested, contact Andrew Cooper (home phone: 795-3585, e-mail: acooper@pobox.com).

Many thanks to all who helped last month and, in advance, many thanks to all who will help this month.

John Polacheck

Dark Skies for July 2000

DARK SKIES (no twilight, no moonlight) for Tucson in 24-hour MST: 18=6pm, 20=8pm, 22=10pm, 0=12am
RISE, SET, VISIBILITY for sun and bright planets: rise for morning object, set for evening object

Fr/Sa	30/ 1	21:15 - 3:41	Mo/Tu	10/11	1:54 - 3:48	Fr/Sa	21/22	21:04 - 22:51
Sa/Su	1/ 2	21:15 - 3:42	Tu/We	11/12	2:31 - 3:48	Sa/Su	22/23	21:03 - 23:23
			We/Th	12/13	3:10 - 3:49			
Su/Mo	2/ 3	21:14 - 3:42	Th/Fr	13/14	- - -	Su/Mo	23/24	21:02 - 23:57
Mo/Tu	3/ 4	21:37 - 3:43	Fr/Sa	14/15	- - -	Mo/Tu	24/25	21:01 - 0:33
Tu/We	4/ 5	22:23 - 3:43	Sa/Su	15/16	LUNAR ECLIPSE	Tu/We	25/26	21:00 - 1:14
We/Th	5/ 6	23:03 - 3:44				We/Th	26/27	20:59 - 2:00
Th/Fr	6/ 7	23:40 - 3:45	Su/Mo	16/17	- - -	Th/Fr	27/28	20:58 - 2:54
Fr/Sa	7/ 8	0:14 - 3:45	Mo/Tu	17/18	- - -	Fr/Sa	28/29	20:57 - 3:55
Sa/Su	8/ 9	0:47 - 3:46	Tu/We	18/19	21:06 - 21:10	Sa/Su	29/30	20:56 - 4:04
			We/Th	19/20	21:06 - 21:45			
Su/Mo	9/10	1:20 - 3:47	Th/Fr	20/21	21:05 - 22:18	Su/Mo	30/31	20:55 - 4:05

Weekend	Sun	Sun	Mercury		Venus		Mars		Jupiter		Saturn		
Sa/Su	Set	Rise	Rise	Vi	Set	Vi	Rise	Vi	Rise	Vi	Rise	Vi	Vi=Visibility
1/ 2	19:33	5:20	6:00	-	19:57	8	5:17	-	2:39	-1	2:30	1	-3 brilliant
8/ 9	19:32	5:23	5:15	-	20:03	7	5:11	-	2:16	-2	2:05	1	0 conspicuous
15/16	19:29	5:27	4:36	-	20:07	5	5:05	-	1:54	-2	1:40	1	3 moderate
22/23	19:26	5:31	4:12	5	20:09	4	4:59	-	1:31	-2	1:15	0	6 naked eye limit
29/30	19:21	5:36	4:08	4	20:08	4	4:54	-	1:08	-2	0:49	0	9 binoculars limit

By Erich Karkoschka

TAAA Board of Directors Meeting - June 8, 2000

EDITOR'S NOTE: The following information are summaries of the topics discussed at the board meeting.

Location: Steward Observatory Conference Room N305, University of Arizona
Call to Order: 7:09 pm
Board Members Present: John Kalas, Andrew Cooper, Terri Lappin, Steve Peterson
Board Members Absent: Bill Lofquist, Robert Callanan, Jane Tongate
Members Present: Laurel Dunlap (ALCor)

1. Treasurer's Report - Terri Lappin distributed copies of the monthly financial statement for board review. The TIMPA Project Fund continues to grow from all of the paid star parties that the club has performed in the past several months. Total membership in the TAAA hovers around 360.
2. TIMPA Site Update - John Kalas reported that TIMPA Site Chairperson, John Polacheck, had scheduled a trip to Kitt Peak on 6/11 to review the possibility of disassembling the dome and support structure to facilitate transporting them to the TIMPA Site.
3. TAAA Club Apparel - John Kalas voiced his interest in continuing the promotion of the club apparel. Several members had shown interest in larger size garments. Andrew Cooper presented Terri Lappin with an inventory of the remaining apparel. He offered to submit an article for the newsletter requesting members with special size requirements to contact him to place orders for the next purchase. The board authorized Andrew to purchase additional apparel.
4. TAAA Constitutional Amendment (Elections) - Tabled
5. July 1st Empire Ranch Star Party - John Kalas acknowledged the oversight of not publicizing the club event in the June newsletter. John mentioned that it would be very helpful if the club's e-mail exploder were operational to get the announcement out to, at least, the members who have e-mail capabilities.
6. TAAA E-Mail Exploder - Andrew Cooper reported that he has had further discussions with key individuals in the SEDS organization and is closer to implementing the exploder. When available, the exploder will be used by the board only to disseminate information the club members.
7. Next Kitt Peak Star Party - John Kalas mentioned that he had received an e-mail message from a TAAA Member promoting another club star party on Kitt Peak. Laurel Dunlap responded that she was considering scheduling the next star party in the Fall.

TAAA Board of Directors Meeting - June 8, 2000 (Cont.)

8. Astronomical League Voting - Laurel Dunlap, ALCor, reviewed the items requiring a vote by the TAL. She and the board unanimously decided that the voting could be handled by the board rather than involving the entire TAL. All of the officers running for positions in the AL were unanimously elected by the TAL Board. Several procedural measures were also unanimously approved by the TAL Board. Laurel will fill out the ballot and send it to the AL.
9. 2001 Calendars – Terri Lappin asked the board if the club should purchase Astronomy Calendars again this year. Last year, the club purchased 70 calendars and sold them all. The board unanimously authorized Terri to purchase another 70 calendars for 2001.
10. Tripod for Meade ETX-EC Telescope - Laurel Dunlap reported that efforts to solicit a donation of a tripod for this donated telescope had not yielded any results. She proposed that the club purchase a JMI Tripod specifically designed for the ETX telescope for about $200. from Starizona. A motion to authorize purchase of the tripod was made by Andrew Cooper and seconded by Steve Peterson. The board unanimously approved the expenditure.

Meeting adjourned: 8:54 pm

TAAA Board of Directors Meeting - May 11, 2000

EDITOR'S NOTE: Minutes of Board of Directors meeting were not available at press time.

Desert Skies Classified

FOR SALE:	Meade ETX-90EC Telescope with Autostar computer includes; right angle & straight-thru finderscopes, two tripods (tabletop & deluxe field tripods), erecting prism, electronic focusser, camera T-Adapter, and hard carrying case, for $600. See this setup at Starizona or call Joe at 722-3367. (9/00)
FOR SALE:	Meade Pictor 416XT CCD Camera. Asking $1250. Call John Baker at 544-4570. (8/00)
FOR SALE:	Celestron 7x50 Binoculars with case. Asking $100. Call Duane Niehaus at 290-1722. (8/00)
FOR SALE:	Meade 12" LX200 SCT Telescope, includes: super wedge, tripod, custom storage box on wheels, Telrad finderscope, 2" Astro-Physics barlow, Pentax 40mm eyepiece. Excellent condition, used about 12 times. Asking $4,500. Call Doug at (520) 762-5135 or e-mail at: <clemans@flash.net>. (7/00)
FOR SALE:	Celestron C-5+ with TWO tripods, one light-weight for the quick peek and one with equatorial wedge, RA clock drive (9-volt battery runs 50 hours), hand controller, 1x red dot reflex finder, piggyback photography bracket, DEC motor, more. Was $1100+, must sell! $850 obo. Call Randy at 520/795-5720 or e-mail <randystars@aol.com>. (9/00)
FOR SALE:	TeleVue 5x Powermate Barlow Lens gives high magnification to long eye relief eyepieces (good for eyeglass use), fully multicoated, 4-lenses with blackened edges, internal antireflection threading for excellent contrast. $125 firm. Call Randy at 520/795-5720 or e-mail <randystars@aol.com>. (9/00)
FOR SALE:	Celestron 9x56 Large Binoculars with case, excellent condition. $100. cash. Call Eric at 323-8435. (9/00)
FOR SALE:	Russian-made 80mm f/6 reflector telescope, equatorial mount with slow motion controls, 1¼" 25mm Plossl eyepiece, 1¼" 15mm Kellner eyepiece, Barlow lens, 6x25 finderscope, pedestal, legs, filter set, solar aperture cap, tools, instructions, wooden storage box. Excellent for beginning astronomers or for a second travel scope. $200. Call Jeff Brydges at 888-0591. (9/00)
FOR SALE:	Heavy duty pedestal mount with ¼ " thick metal walls and 3 legs. For a 6" to 10" telescope. $75. Call Jeff Brydges at 888-0591. (9/00)
FOR SALE:	All-metal pedestal mount with 3 legs for a 4½" reflector telescope or 4"-5" refractor telescope. Includes equatorial mount, clock drive, cradle, slow motion controls, and counterweight. $150. Call Jeff Brydges at 888-0591. (9/00)
FOR SALE:	Losmandy G-11 German Equatorial Mounting complete with 3 different sets of tripod legs, extra pier, leg levelers, polar alignment scope, and extra counterweights. This is an excellent mount! $2200. Call Steve Peterson at 326-5303 or email at: <swpeterson@theriver.com>. (9/00)
FOR SALE:	Takahashi FC-76 fluorite refractor telescope with EM-1 German Equatorial Mount, "Vari-Extender", f/5.9 Reducer, 7X50 finder scope, 7mm, 12.5mm, & 18mm Takahashi Orthoscopic eyepieces, assorted filters, star diagonal, Zeiss 25mm eyepiece, battery pack and hand controller. Excellent Condition! Complete outfit $2500. Call Steve Peterson at 326-5303 or email at: <swpeterson@theriver.com>. (9/00)
FOR SALE:	Celestron Rubber-Armored C-90 Spotting Scope #81027. Comes with a hybrid 45° erect image diagonal and a 26mm Plossl 38x eyepiece, both 1¼". Eye relief is 22mm and the field of view is 1.4°. The 1¼" size diagonal and eyepiece give a wide field of view and greater eye relief than the .96" size. This model also has a protective covering of black rubber over the body. New in box! $375. Call Steve Peterson at 326-5303 or email at: <swpeterson@theriver.com>. (9/00)
SERVICE:	Custom machine shop work – design and manufacture of telescopes and mountings. Fabrication of small parts or repair of existing hardware. For consultation and price quotes, call Duane Niehaus at 290-1722.

Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list, call John Kalas at 620-6502 or e-mail at jckalas@aol.com.

Constellation Report by Chris Lancaster

Serpens Caput/Serpens Cauda

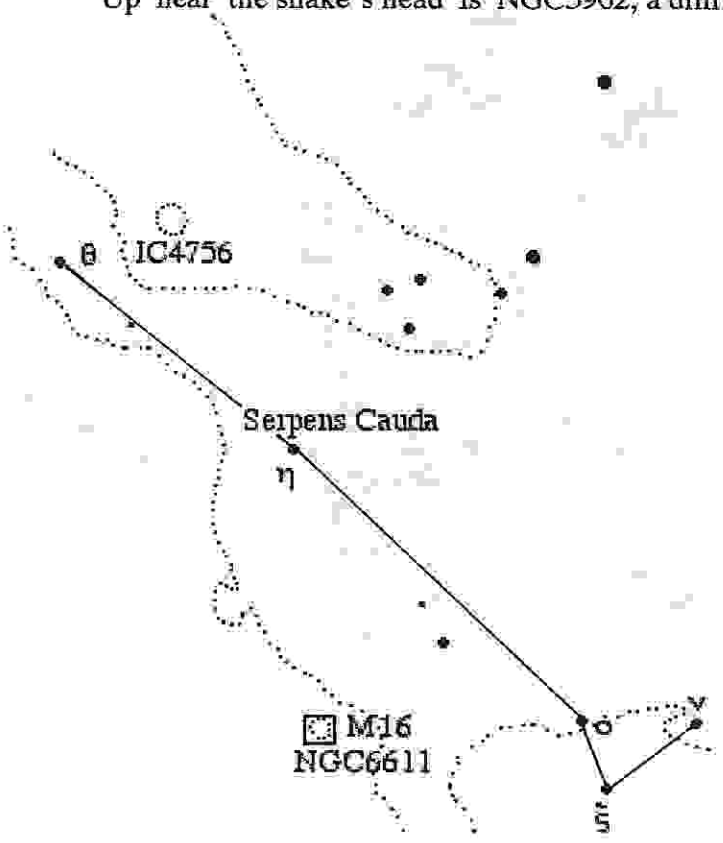
Head/Tail of the Snake

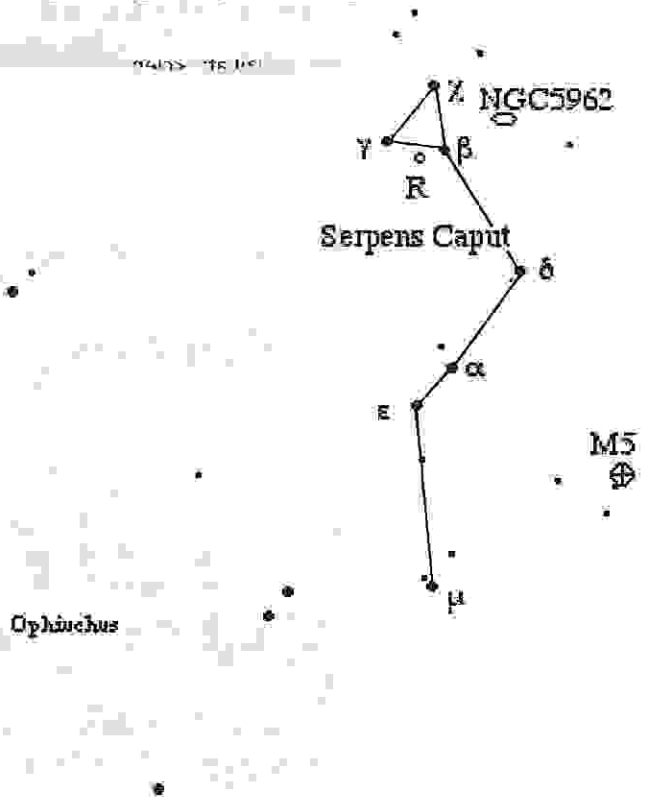
This constellation is uniquely broken into two parts with Ophiuchus, the legendary physician Asclepius who learned how to bring the dead back to life from a snake which was able to revive another snake that he had recently killed, intervening between. To the west we see Serpens Caput, the head of the snake, and, on the east side of Ophiuchus, Serpens Cauda, the tail of the snake. This complex pair of constellations lies just above the ecliptic from the summer Milky Way to a distance west covering about 4 hours of RA. On July 15th, Serpens Caput begins to cross the meridian at about 8:30pm, and Serpens Cauda does the same at about 11:00pm.

Starting at the head of the snake we find M5, a spectacular globular cluster of magnitude 5.8 measuring 17.4' across. It is easy to find 22' NNW of the 5th magnitude star 5 Serpentis. (If you pause to notice 5 Serpentis, you'll see a double star of magnitudes 5 and 10 separated by 11".) M5 ranks among the best globulars in the sky, showing a bright glow in small scopes and a dazzling swarm of pinpoint stars in large instruments. It has a bright core that appears slightly oval in shape, and, along one edge, loops of stars that gives the impression of flower petals.

Up near the snake's head is NGC5962, a dim 12.2 magnitude galaxy, but one of the brightest among the dozen or so galaxies in this half of Serpens. It can be found at RA 15h 36.5' Dec +16° 36.5', or not quite 4 degrees practically due north of 3.8 magnitude Delta (δ) Serpentis. You should see a distinct nucleus surrounded by a gradually dimming fat oval shape completing the structure of the galaxy about 3' across.

Moving over to Serpens Cauda we see more galactic deep sky objects owing to the fact that here we are looking toward the Milky Way's spiral arms. M16 (RA 18h 18.8' Dec -13° 47.0') is very familiar to everyone who has looked through an astronomy textbook. Its the photogenic Eagle Nebula, cataloged by Charles Messier because of the star cluster, but also designated NGC6611 from the nebulosity in which the stars are embedded. Any telescope will see the cluster, but those in the 10-inch range should easily bring out the nebulosity. Farther up, 4.5° ENE of Theta (θ) Serpentis, is the open cluster IC4756. This is a large, loose cluster, magnitude 5 and 52' in size. An interesting feature of this cluster is the letters "mc" (or "wc" depending on your viewpoint) outlined in a few of the stars in the center of the cluster.





Now, move back to Theta, named Alya, which marks the end of the snake's tail. This is a pleasant double star shining with a combined magnitude of 4.05. The two components share a common brightness and spectral type of A5 with an easy separation of 22".